

What is claimed is:

1. A method for detecting a cancerous colon cell comprising:

contacting a sample obtained from a test colon cell with a probe for detection of a gene product of a gene differentially expressed in colon cancer, wherein the gene comprises a sequence selected from the group consisting of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29, said contacting being for a time sufficient for binding of the probe to the gene product; and

comparing a level binding of the probe to the sample with a level of probe binding to a control sample obtained from a control colon cell, wherein the control colon cell is of known cancerous state;

wherein an increased level of binding of the probe in the test colon cell sample relative to the level of binding in a control sample is indicative of the cancerous state of the test colon cell.

2. The method of claim 1, wherein the probe is a polynucleotide probe and the gene product is nucleic acid.

3. The method of claim 1, wherein the gene product is a polypeptide.

4. The method of claim 1, wherein the gene product is immobilized on an array.

5. The method of claim 1, wherein the probe is immobilized on an array.

6. A method of identifying a cancerous colon cell, the method comprising the steps of:

detecting at least one differentially expressed gene product, where the gene product is encoded by a gene comprising a sequence of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29 in a test sample, where the test sample is derived from a test cell suspected of being a cancerous colon cell; and

comparing the expression level of the detected differentially expressed gene product with the expression level of the differentially expressed gene product in a control sample, where the control sample is derived from a cancerous colon cell;

wherein detection of the expression level of the differentially expressed gene product in the test sample that is similar to the expression level of the gene product in the control sample indicates that the test cell is a cancerous colon cell.

7. The method of claim 6, wherein said detecting is by hybridization of the test sample to a reference array, wherein the reference array comprises an identifying sequence of at least one of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29.

8. The method of claim 7, wherein the gene product detected is a polypeptide.

9. A method of identifying a cancerous colon cell, the method comprising the steps of: detecting at least one differentially expressed gene product, where the gene product is encoded by a gene comprising a sequence of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29 in a test sample, where the test sample is derived from a test cell suspected of being a cancerous colon cell; and

comparing the expression level of the detected differentially expressed gene product with the expression level of the differentially expressed gene product in a control sample, where the control sample is derived from a normal colon cell;

wherein detection of the expression level of the differentially expressed gene product in the test sample that is similar to the expression level of the gene product in the control sample indicates that the test cell is a cancerous colon cell.

10. The method of claim 9, wherein detection of the expression level of the differentially expressed gene product in the test sample that is greater than the expression level of the gene product in the control sample indicates that the test cell is a colon tumor cell

11. The method of claim 9, wherein detection of the expression level of the differentially expressed gene product in the test sample that is greater than the expression level of the gene product in the control sample indicates that the test cell is a metastatic colon tumor cell.

12. A method of identifying a cancerous colon cell, the method comprising the steps of:

detecting at least one differentially expressed gene product, wherein detection is by detecting hybridization of a polynucleotide comprising a sequence of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29 in a test sample, where the test sample is derived from a test cell suspected of being a cancerous colon cell; and

comparing the hybridization level of the detected differentially expressed gene product with the hybridization level of the differentially expressed gene product in a control sample, where the control sample is derived from a cancerous colon cell;

wherein detection of the hybridization level of the differentially expressed gene product in the test sample that is similar to the hybridization level of the gene product in the control sample indicates that the test cell is a cancerous colon cell.

13 A method of identifying a cancerous colon cell, the method comprising the steps of:

detecting at least one differentially expressed gene product, wherein detection is by detecting hybridization of a polynucleotide comprising a sequence of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29 in a test sample, where the test sample is derived from a test cell suspected of being a cancerous colon cell; and

comparing the hybridization level of the detected differentially expressed gene product with the hybridization level of the differentially expressed gene product in a control sample, where the control sample is derived from a normal colon cell;

wherein detection of the hybridization level of the differentially expressed gene product in the test sample that is similar to the hybridization level of the gene product in the control sample indicates that the test cell is a cancerous colon cell.

14. A method for suppressing or inhibiting a cancerous phenotype of a cancerous cell comprising introducing into a mammalian cell an antisense polynucleotide for inhibition of expression of a gene comprising a sequence selected from the group consisting of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29, wherein inhibition of expression of the gene inhibits development of a cancerous phenotype in the cell.

15. The method of claim 14, wherein the cancerous phenotype is metastasis.

16. The method of claim 14, wherein the cancerous phenotype is aberrant cellular proliferation relative to a normal cell.

17. The method of claim 14, wherein the cancerous phenotype is loss of contact inhibition of cell growth..

18. A method of inhibiting tumor growth, the method comprising:
administering an agent to a subject having a tumor expressing a gene comprising a sequence selected from the group consisting of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29, wherein the agent decreases activity of a gene product encoded by the gene, thereby inhibiting tumor growth in the subject.

19. The method of claim 18, wherein the tumor comprises an epithelial cancer cell.

20. The method of claim 18, wherein the epithelial cancer cell is a colon cancer cell.

21. A method for assessing the tumor burden of a subject, the method comprising:
detecting a level of a differentially expressed gene product in a test sample from a subject suspected of or having a tumor, the differentially expressed gene product comprising a sequence selected from the group consisting of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29;

wherein detection of the level of the gene product in the test sample is indicative of the tumor burden in the subject.

22. A method for identifying a gene product as a target for a cancer therapeutic, the method comprising:

contacting a cancerous cell expressing a candidate gene product with an anti-cancer agent, wherein the candidate gene product corresponds to a sequence selected from the group consisting of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29; and

analyzing the effect of the anti-cancer agent upon a biological activity of the candidate gene product and upon a cancerous phenotype of the cancerous cell;

wherein modulation of the biological activity of the candidate gene product and modulation of the cancerous phenotype of the cancerous cell indicates the candidate gene product is a target for a cancer therapeutic.

23. The method of claim 22, wherein the cancerous cell is a cancerous colon cell.

24. The method of claim 22, wherein the inhibitor is an antisense oligonucleotide.

25. The method of claim 22, wherein the cancerous phenotype is aberrant cellular proliferation relative to a normal cell.

26. The method of claim 22, wherein the cancerous phenotype is colony formation due to loss of contact inhibition of growth.

27. A method for identifying agents that decrease biological activity of a gene product differentially expressed in a cancerous cell, the method comprising:

contacting a candidate agent with a differentially expressed gene product, the differentially expressed gene product corresponding to a sequence selected from the group consisting of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29; and

detecting a decrease in a biological activity of the gene product relative to a level of biological activity of the gene product in the absence of the candidate agent.

28. The method of claim 27 wherein said detecting is by detection of a decrease in expression of the differentially expressed gene product.

29. The method of claim 28 wherein the gene product is mRNA or a cDNA prepared from the mRNA gene product.

30. The method of claim 27, wherein the gene product is a polypeptide.

31. An isolated polynucleotide comprising a nucleotide sequence comprising having at least 90% sequence identity to an identifying sequence selected from the group consisting of SEQ ID NOS:3, 5, 7, 9, 11, 12, 15, 16, 20, 22, 24, 27 and 29 or degenerate variants thereof.

32. An array comprising the polynucleotide of claim 31.

33. An array comprising at least two different polynucleotides, wherein the polynucleotides comprise a sequence having at least 90% sequence identity to an identifying sequence selected from the group consisting of SEQ ID NOS:3, 5, 7, 9, 11, 12, 15, 16, 20, 22, 24, 27 and 29 or degenerate variants thereof.

34. A recombinant host cell containing the polynucleotide of claim 31.

35. An isolated polypeptide encoded by the polynucleotide of claim 31.

36. An antibody that specifically binds a polypeptide of claim 35.

37. A polynucleotide comprising the nucleotide sequence of an insert contained in a clone selected from the group consisting of: a) clone SK-1, deposited as ATCC Accession No.

PTA-1360; b) clone SK-2, deposited as ATCC Accession No. PTA-1361; c) clone SK-5, deposited as ATCC Accession No. PTA-1362; d) clone 1665 short, deposited as ATCC Accession No. PTA-1363; e) clone 1665 long, deposited as ATCC Accession No. PTA-1363; f) clone SK-19, deposited as ATCC Accession No. PTA-1364; g) clone Junc2-6, deposited as ATCC Accession No. PTA-1365; h) clone XD4b, deposited as ATCC Accession No. PTA-1366; i) clone XD1b, deposited as ATCC Accession No. PTA-1367; j) clone XD7c, deposited as ATCC Accession No. PTA-1368; k) clone XD10b, deposited as ATCC Accession No. PTA-1369; l) clone XD11b, deposited as ATCC Accession No. PTA-1370; and m) clone Junc4-2, deposited as ATCC Accession No. PTA-1371.

38. An isolated polynucleotide comprising a sequence encoding a polypeptide of SEQ ID NOS:2, 4, 6, 8, 10, 14, 17, 19, 21, 23, 25 and 28.

39. A pharmaceutical composition comprising an active agent for modulation of expression of a gene differentially expressed in cancerous or dysplastic colon cells, wherein the gene comprises a sequence of SEQ ID NOS:1, 3, 5, 7, 12, 13, 15, 16, 18, 20, 22, 24, 26, 27 and 29.

40. A pharmaceutical composition comprising an antisense polynucleotide for inhibition of production of a gene product encoded by a polynucleotide having a sequence selected from the group consisting of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29.

41. The pharmaceutical composition of claim 40, wherein the antisense polynucleotide comprises a sequence selected from the group consisting of SEQ ID NOS: 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 91, 92, 93, 94, 98, 99, 105, 106, 107, 108, 109, 115, 116, 117, 118, 119, 124, and 126.

42. An isolated cDNA obtained by the process of amplification using a polynucleotide comprising at least 15 contiguous nucleotides of a nucleotide sequence selected

from the group consisting of SEQ ID NOS:1, 3, 5, 7, 9, 11-13, 15, 16, 18, 20, 22, 24, 26, 27 and 29.

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